Notice of Allowability	Application No.	Applicant(s)	
	10/765,116	EVANS, ROLLIN M.	
	Examiner	Art Unit	
	Albert J. Gagliardi	2884	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *submissions of 21 December (informal) and 19 October and 2006*.

2. ☒ The allowed claim(s) is/are *20-23,25,27-32,34-54 and 59-74*.

3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
   a) ☐ All b) ☐ Some* c) ☐ None of the:
      1. ☐ Certified copies of the priority documents have been received.
      2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
      3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
   (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

   Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____ .
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

EXAMINER'S AMENDMENT AND STATEMENT OF REASONS FOR ALLOWANCE

Examiner's Amendemnt

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

2. Authorization for this examiner's amendment was given in a telephone interview with Ted Sabety on 18 December 2006.

The application has been amended as follows:

Claims 20, 25, 32, 37, 46, 49, 51 and 71 (of the Response filed 19 October 2006) have been cancelled and replaced with the newly submitted claims 20, 25, 32, 37, 46, 49, 51 and 71 attached below which were received in the informal response filed 21 December 2006.

IN THE CLAIMS:

20. *(currently amended)* A method executed by a radiation source detection system for detecting low-level radioactive sources moving past a detection apparatus comprising:

Measuring the approximate number of radioactive radiation counts [[for]] that occur during each of at least two substantially distinct time slices occurring during the approximate time period the source passes the apparatus; and

~~Calculating a correlation [[of]] among at least two of the measured radiation counts with respect to either all of the at least two time slices or a subset of the at least two time slices corresponding to the at least two measured counts~~

Calculating the probability that the measured counts received in each of the at least two time slices is attributable to background radioactive radiation;

Determining the degree that the set of calculated probabilities correlate with a radioactive radiation source passing the detector during the approximate time period;

Storing the result of the determination step.

25. *(currently amended)* A method executed by a radioactive radiation source detection system for detecting low-level radioactive sources moving past a detection apparatus comprising:

Measuring the approximate number of radioactive radiation counts [[for]] that occur during each of a plurality of substantially distinct time slices occurring during the approximate time period that the radioactive source passes the apparatus;

Calculating for each time slice within a subset of the plurality of time slices the probability that the radioactive radiation counts for the time slice came from background where the subset has at least two elements; and

Determining the degree that the set of calculated probabilities correlate with a radioactive radiation source passing the detector during the approximate time period;

Storing the result of the determination step.

32. *(currently amended)* A method executed by a radioactive radiation source detection system for detecting low-level radioactive sources moving past a detection apparatus comprising:

Measuring the approximate number of radiation counts detected by at least two detectors comprising the apparatus; and

~~Calculating a correlation [[of]] among the at least two of the measured radiation counts with respect to either all of the at least two the detectors or a subset of the at least two detectors corresponding to the at least two measured radiation counts.~~

Determining the degree that the set of measured radioactive radiation counts correlate with a radioactive radiation source passing the detectors during the approximate time period;

Storing the result of the determination step.

37. *(currently amended)* A method executed by a radioactive radiation source detection system for detecting low-level radioactive sources moving past a detection apparatus comprising:

Measuring the approximate number of radiation counts detected by a plurality of detectors comprising the apparatus; and

~~Calculating for each detector within a subset of the plurality of detectors the probability that the radiation counts for that detector came from background;~~

Calculating the probability that the measured counts received in each of the plurality of detectors is attributable to background radioactive radiation;

Determining the degree that the set of calculated probabilities correlate with a radioactive radiation source passing the detector during the approximate time period;

Storing the result of the determination step.

46. *(currently amended)* A method executed by a radioactive radiation source detection system for detecting low-level radioactive sources moving past a detection apparatus comprising:

Measuring in each of [[the]] at least two detectors comprising the apparatus the individual approximate number of radioactive radiation counts during each of at least two substantially distinct time slices occurring approximately during the time period the source passes the apparatus; and

~~Calculating a first correlation [[of]] among [[the]] at least two measured radiation counts with respect to their corresponding a subset of the at least two time slices together with and a second correlation among the at least two measured radiation counts with respect to their corresponding subset of the at least two detectors.~~

Determining the degree that the set of measured radioactive radiation counts correlate with a radioactive radiation source passing the detectors during the approximate time period;

Storing the result of the determination step.

49. (*currently amended*) ~~The method of Claim 27~~ A method for detecting low-level radioactive sources moving past a detection apparatus comprising:

Measuring the approximate number of radioactive radiation counts for each of a plurality of substantially distinct time slices occurring during the approximate time period that the radioactive source passes the apparatus;

~~where there is no calculating of probabilities step,~~ and [[the]] determining [[step is]] whether ~~at least two of~~ for some integer n, n of the radiation counts corresponding to the plurality of time slices ~~the subset~~ are greater than or equal to a pre-determined threshold, where the number n is greater than or equal to two and less than or equal to the number of time slices;

Storing the result of the determination step.

51. (*currently amended*) ~~The method of Claim 39 where there is no calculating of probabilities step,~~
A method for detecting low-level radioactive sources moving past a detection apparatus comprising:

Measuring the approximate number of radioactive radiation counts detected by a plurality of detectors comprising the apparatus during the approximate period of time the source passes the apparatus;

and [[the]] determining [[step is]] whether ~~at least two~~ for some integer n, n of the radioactive radiation counts corresponding to the [[subset]] plurality of detectors are greater than or equal to a pre-determined threshold, where the number n is greater than or equalt to two and less than or equal to the number of the plurality of detectors;

Either or both storing the result of the determination step or initiating an alarm if the determination result meets a pre-determined criteria.

71. *(new)* A method executed by a radiation source detection system for detecting low-level radioactive sources moving past a detection apparatus comprising:

Measuring the approximate number of radioactive radiation counts that occur during each of a plurality of substantially distinct time slices occurring during the approximate time period that the radioactive source passes the apparatus;

Calculating for each time slice within a subset of the plurality of time slices the probability that the radiation counts for the time slice came from a radiation source where the subset has at least two elements;

Determining the degree that the set of calculated probabilities correlate with a radioactive radiation source passing the detector during the approximate time period;

Storing the result of the determination step.

Allowable Subject Matter

3. Claims 20-23, 25, 27-32, 34-54, 59-74 are allowed.

4. The following is an examiner's statement of reasons for allowance:

Regarding independent claims 20, 25, 32, 37, 46, 49, 51 and 71 (as amended), the amendments are considered as sufficient to overcome the rejection under 35 U.S.C. 101 and 112.

Regarding independent claims 20, 25, 32, 37, 46, 49, 51, 63, 66, 67 and 71 (as amended), the claims are considered allowed over the prior art of record (Kruse – US 4,509,042) because while *Kruse* generally suggests calculating the probability that some predetermined count level (i.e., a level 3.1 or 4 standard deviations above the mean background) is attributable to background (col. 5, lines 57-64), *Kruse* does not fairly suggest the invention as claimed.

The remaining claims are allowed on the basis of their dependency.

5. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Albert J. Gagliardi whose telephone number is (571) 272-2436. The examiner can normally be reached on Monday thru Friday from 10 AM to 6 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David P. Porta can be reached on (571) 272-2444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

7. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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AJG